

REPETITIVE POWER PULSE GENERATOR WITH FAST RISING PULSE

Abstract of the Disclosure

A solid-state pulse generator using a split magnetic core transformer is described. In one embodiment, the solid-state drive circuit uses MOSFETs switching a blumlein to produce a desired input pulses in a primary winding of the split magnetic core. The pulse length is determined primarily by the characteristics of the blumlein and the split core transformer. The "on" time of the solid-state devices can exceed the output pulse length, thereby reducing the chance of damaging voltage spikes. The use of a split magnetic core allows several solid-state drive circuits to be used in parallel to produce a single output pulse. In one embodiment, each solid-state drive circuit drives a separate single-turn primary winding of a split magnetic core transformer. In one embodiment, each core of the split core transformer has one primary winding. The separate cores of the split core transformer are provided with a single secondary winding that couples all of the cores to produce a relatively high-voltage output pulse with relatively few turns in the secondary winding.

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